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GEORGE D. HOLTON

MONTANA Wildlife

STATE DOCUMENTS

VOL. III — NO. 3

Official Publication
Montana Fish and Game Department

EDITORIAL:

Montana's Highway Commission Recognizes Wildlife Needs

Much of what we call "progress" has been made at the expense of our natural resources. Some of this has been inevitable, but a great deal of the waste and damage, particularly to wildlife habitat, could have been avoided by thoughtful planning.

In this respect, it should be most encouraging to conservasionists to learn of the action taken by the Montana State Highway Commission in response to a letter from the Montana Fish and Game Commission concerning the problems of destruction of fish and game habitat during highway construction.

The text of this resolution is reprinted in its entirety since this expression of cooperation in protecting wildlife might well be a pattern for other agencies and organizations to follow when their activities might endanger Montana's valuable wildlife resources.

RESOLUTION

"WHEREAS, the aims, objectives and undertakings of the State Fish and Game Commission of the State of Montana are of a nature and designed to add to the pleasure and well-being of all Montana people, and

WHEREAS, controlled abundance of fish and game adds materially to the economic wealth of our State, and

WHEREAS, the GREAT-OUT-OF-DOORS of which Montana so proudly boasts would lose its savor were her mountains, streams and valleys to become bare of their native inhabitants;

NOW, THEREFORE, BE IT RESOLVED, That the STATE HIGHWAY COMMISSION, incidental to its pre-construction, construction and maintenance activities, shall cooperate to the full in every practical way to assist the said STATE FISH AND GAME COMMISSION in carrying out its objectives.

BE IT FURTHER RESOLVED, That pre-construction, construction and maintenance department heads be given copies of this Resolution."

MONTANA FISH AND GAME DEPARTMENT

Official Publication

State of Montana

J. Hugo Aronson, Governor

MONTANA FISH AND GAME COMMISSION

Walter Banka, Chairman

William T. Sweet — Manson H. Bailey, Jr.

Ralph D. Shipley — H. W. Black

A. A. O'Claire, Secretary

McKEE PRINTING CO. BUTTE, MONTANA

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W. A. Allen.....Fisheries Superintendent
R. F. Cooney.....Wildlife Restoration
W. K. Thompson.....Information and Education
O. N. Woolverton.....Chief Clerk

The State Game Warden's Message

Montana's Fish and Game Department has, within the past 10 years, achieved the status of big business. An annual income of over a million and a quarter dollars is required to operate this business, and its operation brings into the state an amount estimated to exceed thirty million dollars.

Not only is wildlife a business, it is fundamentally a science requiring research by the best available methods. Montana is in the position today that our Eastern states passed some years ago. We are at the crossroads of a future which will either see Montana as a top-ranking wildlife region, or our State will be a polluted, destroyed area — a wildlife desert. The choice is ours to make, and we must make this decision upon the basis of future needs of the nation for our wilderness type of country.

As a business and a science, the management of Montana's wildlife is a large and important job. It is with the feeling of challenge and yet one of humility that I undertake the administration of the department charged with the responsibility of managing the state's wildlife ressources.

This department can be no stronger than the sportsmen and other interested people backing it. From my years of working with Montana hunters and fishermen, I know we have a strong backing. It is with the knowledge of this support that I approach the job with confidence.

A. A. O'Claire, State Game Warden

Montana Wildlife

Vol. III Mary Moore, Editor No. 3

Vernon Craig, Artist

TABLE OF CONTENTS

Montana's Highway Commission Recognizes Wildlife Needs ..... Inside Front Cover
State Game Warden's Message 1
Former State Game Warden Reappointed 3
More Wrongs Will Not Make It Right 4
Montana's Sportsmen's Projects 6
Machines Speed Game Drawings 8
Awards for Montana Trophies 10
Four Upland Game Birds of Montana 11
Montana Game Birds 12
Thar's Bar in Them Thar Hills 15
Duck Stamps: Good Management Emblems 19
Management Pays Off! 20
Robin Hood — 1953 24
Why We Have "No Hunting" Signs ..... Inside Back Cover

Fall Issue — 1953

"Montana Wildlife," published quarterly, may be obtained free of charge by writing the Montana Fish and Game Department at Helena. Contents of this magazine may be reproduced in whole or in part if properly credited.

Our Cover

The bird on the cover is a Franklin's grouse **(Canachites Franklini).** Commonly known as a "fool hen" it has little fear of man, and lives in forests, prairie and mountain regions. Franklin's grouse are dwindling in numbers because of their accessibility and trusting nature.

This species nests on the ground, or under low spruce branches. They eat fir and pine needles, plants, insects and berries. During the winter, the Franklin's grouse spends most of the time in trees and are hard to detect.

For more information about the Franklin's grouse, and three other lesser-known species of Montana upland game birds, see pages 11-14.

PHOTO CREDITS

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Former State Game Warden Reappointed

Drawn back to the work that has been his career for nearly three decades, A. A. "Archie" O'Claire is again serving as director of Montana's State Fish and Game Department. Under the official title of Montana State Fish and Game Warden, Mr. O'Claire will be charged with the responsibility of administrating a department of 238 employees, a physical plant valued at nearly two million dollars, with an annual operating expense of $1,106,873.00.

This tremendous responsibility falls on capable and experienced shoulders, as "Arch" has worked up through all of the major departmental divisions.

In 1920, he started his career with the Fish and Game Department at the spawn-taking station at Ashley Lake. A year later, he was appointed special deputy for the Flathead District and promoted to regular deputy in 1925. In those days, his district ran from the Continental Divide to the Montana-Idaho border, and from the Canadian line to the Nine-mile Divide. Transportation was slow and uncertain. Horses, Model T Fords, and snowshoes were the chief methods of travel.

For 21 years, Archie served on the enforcement staff in the Flathead country. In 1941, because of his experience with fur bearers, and his intimate knowledge of the country, he was placed in charge of a fur research study in the North Fork of the Flathead. Mr. O'Claire conducted

this project until he was recalled to Army where he held a commission as Captain of Infantry. He served from 1942 to 1945, and after discharge, was apointed State Game Warden. In that capacity he worked from September 1, 1945 to November 30, 1949.

He resigned in 1949 after 28 years of service to conduct a ranching business near Kalispell, in his home county.

The re-appointment of Mr. O'Claire is considered an excellent choice by fellow department employes, and by the Montana sportsmen who know hime for his capabilities, fairness and sound decisions. He officially took over the Warden's job on October 1.

Characteristic of all persons who are successful in their fields, Mr. O'Claire has a silent assistant — his wife, **Viva.**

To the many who know Mr. and Mrs. O'Claire as a gracious and capable couple, the Commission's selection of Archie is hailed as a wise choice.

More Wrongs Will Not Make It Right

Why is it, in the trout areas of our state, as fishing success becomes poorer and poorer, sportsmen look to other areas where fishing is no better than it is at home? They pick some exotic fish whose introduction into their trout waters is considered as the cure-all to their fishing ills.

Haven't there been enough disasterous examples of this in the past to demonstrate that new introductions seldom aid and are more often harmful? The fish populations of the state as a whole are answers to the question, "What harm will it do?"

If the decision could be made again, would the sportsmen at Polson endorse the introduction of sunfish into Lake Mary Ronan? What would be the attitude of the Libby and Kalispell sportsmen to planting perch in the Thompson Lakes and other trout lakes of their areas? Certainly the Missoula sportsmen would not endorse transplanting bass, sunfish and perch into the lakes of the Clearwater chain. Nor would Helena and Great Falls fishermen consider perch and carp as wise introductions to be made in the Missouri River and its main stem impoundments.

No one will deny that the eastern brook trout is a fine fish in suitable waters. But, just what would be the reaction of the Red Lodge sportsmen to introducing it into their high mountain lakes or to the anglers of the Flathead and Kootenai drainages to spreading it so widely through their fine cutthroat and rainbow trout streams?

True, the walleye and northern pike are different species. What harm could they do? They are voracious feeders and would rid our waters of all rough fish — carp, suckers, squawfish, sunfish and perch — and would leave us with a game fish paradise.

Unfortunately, such a simple utopia would not be realized. It is noteworthy that in spite of the northern and walleye populations, Minnesota found it profitable in 1952 to remove some six million pounds of rough fish from its waters.

These fish are not cure-alls. What might they do to our trout populations? The relationship of walleyes and northerns to the trout is not understood clearly. The sad experience of other introductions in the past should erect a barrier of caution to block further introduction of these fish into trout areas.

Most sportsmen agree that the northern and walleye should not be placed in trout drainages, but they may feel that no harm could come from introducing them into pot hole lakes with no outlets. If every person interested in fish and fishing were law-abiding, introductions might be desirable.

Many well-meaning people in the not too distant past transferred fish from one water to another without authorization. The Thompson Lakes between Kalispell and Libby met their fate in that manner a very short time ago when perch were liberated in the lakes.

It is not wise at this time to make these fish easily available to such self-proclaimed fishery managers who might act unwisely with their own selfish interests in mind. While it is true that we should act for our own benefit in Montana, nevertheless, we should realize a moral obligation to those downstream. This is true particularly in the Columbia River drainage. A mistake in Montana would jeopardize not only Montana's fishery west of the divide, but could affect the fisheries of Idaho, Washington and Oregon as well.

Pressure is exerted upon the Fisheries Division to introduce fish other than northern and walleyed pike into trout waters. Some believe muskellunge, white bass, crappie and smallmouth bass would be desirable; and in spite of past experiences, the large mouth bass, sunfish and perch are mentioned. Certainly, no more need be said to justify denying these requests.

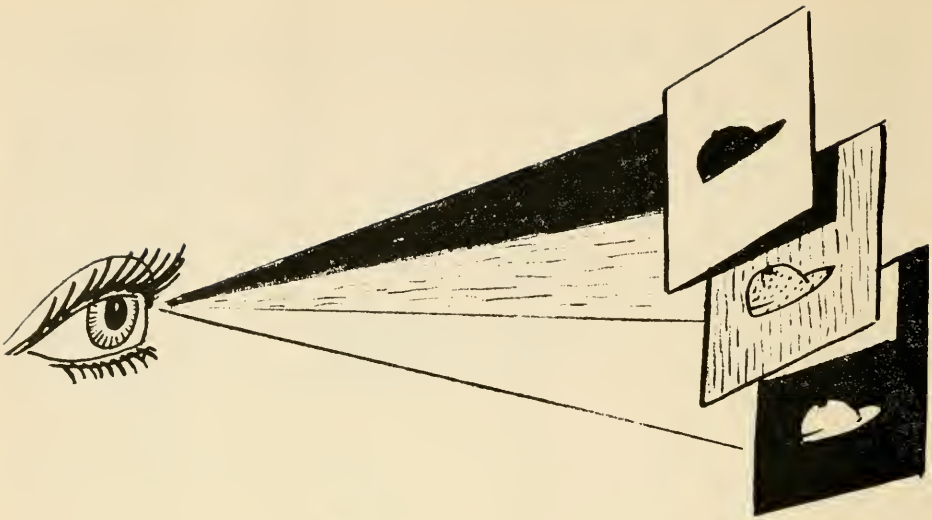
But now, what of the trout? The sportsmen

of the Flathead country are among the most dissatisfied in the state. Most of their lakes have become contaminated with undesirable fish. Many of their once fine cutthroat trout streams have been contaminated with large populations of stunted eastern brook trout. People have learned through experience to ignore these waters and go to the few remaining streams where native fish thrive. The result is heavier fishing pressure with a decrease in individual fishing success.

A dominant cry seems to be that the native cutthroat trout is not suited to the waters, and were rainbow and brown trout introduced in their place, fishing would improve. This is not valid reasoning. The decline in fishing success has a cause which will not normally be corrected by the introduction of a new species of trout. New introductions will not help the situation. The cause of the decline in cutthroat fishing should be uncovered, and sound corrective measures taken.

The Fish and Game Commission in order to deter further complication of the State's fisheries has adopted the following as policy:

1. The hatchery planting programs for both the State and Federal hatcheries in Montana shall be designed from the best information available and shall be approved by the Superintendent of Fisheries as the agent of the Fish and Game Commission before becoming effective.
2. All changes in the planting programs as adopted and all plantings of waters not included in the programs shall be approved by the Superintendent of Fisheries before planting.
3. No plantings of fish other than cutthroat and dolly varden trout shall be made in the Flathead River drainage above Kerr Dam without approval of the Superintendent of Fisheries, the agent of the Fish and Game Commission, and the Fish and Game Commission, except for certain plantings of rainbow trout in lakes without outlets which may be approved by the Superintendent of Fisheries.
4. No plantings of fish shall be made in the South Fork of the Flathead River drainage above Hungry Horse Dam except for cutthroat trout reared from eggs taken from this drainage.
5. No introductions or new introduction of walleyed pike, northern pike, or spiney-rayed fishes shall be made in the waters of the Missouri River drainage above Black Eagle Dam, the Yellowstone River drainange above Laurel, or in any waters west of the Continental Divide without prior approval.
6. No introductions of fishes not now found in Montana shall be made in any waters of the State without approval of the Superintendent of Fisheries as agent of the Fish and Game Commission.



Montana Sportsmen's Projects

SIXTH IN A SERIES

by

Dr. Carl A. Ogrinc, O.D.

This fall, hunters will be out in the forests and on the plains, dressed in the brightest of visible red clothing, as prescribed by state law. Although dressed in red, many hunters may have some close calls because their red clothing can't be seen by a certain percentage of the hunters in the field.

The Valley Sportmen's Association in Glasgow conducted some experiments last winter, and the results led the Association to pass a resolution to ask the State Fish and Game Commission to change the official hunting color from red to yellow.

Three hunter's caps were painted different colors, red, yellow and orange. These caps were placed at one end of the Glasgow Civic Center, against a varied background of tan celotex. The viewing stand was 100 feet away. Since light coming from a distance of over 20 feet appears the same as if coming from infinity, the testing distance was great enough to be accurate.

The group viewed the caps from the stand, and reported what they saw. The yellow cap was seen best by 85 people; orange appeared brightest to 15, and three saw the red hat best. Four people were color blind to red, coming up to the national average for color blindness of four percent. These red-blind subjects saw the yellow without any trouble.

This experiment, conducted with a part of the normal hunting population illustrates that red as a safety color would be unseen in at least four cases. Red is used the world over to

denote danger, but is ineffectual as a part of hunting protection.

Proponents for red as a safe hunting color argue that red is a great contrast to trees and bushes. Contrast is important in visual identification of objects, but in the fall, all the colors of the spectrum are visible under normal conditions. The best choice, the Glasgow sportsmen demonstrated, would be the color most easily seen under all circumstances.

The State Highway Department uses yellow signs on all Montana roads, which are designed to be easily seen by motorists, as are school buses and heavy highway construction equipment.

Manufacturers of sporting clothes make hunting outfits red to conform with state laws and public acceptance. The clothes could just as easily be made in yellow if that were the accepted color. It is up to the public to do away with outmoded opinions and prejudices.

The action of the Valley Sportsmen's Association shows that hunting groups are concerned with the problems of hunting safety, and are doing their part to help eliminate tragic hunting accidents.

Reams of applications are processed for each special season drawing. Requests are dated, big game license numbers examined, fees checked, area choices sorted and filing numbers assigned. Ovie Woolverton, chief clerk, checks part of the day's mail.

Machines Speed

Mechanical brains — electric business machines — processed Montana's special season permit drawings this year for the first time. This efficient method costs about the same as the older hand-drawing system.

In past years, extra workers needed six weeks to prepare applications for drawings, and to mail permits. This year, six day employees and eight night workers spent a week processing 28,000 applications.

The machine system processes applications faster before and after drawings. Lists of permit holders are ready immediately.

A key punch operator prepares the applications for the electric business machines. All the information on the application is punched on the card. The punched holes cause electric machine responses during the card sorting, recoding and other machine operations.

The special season big game drawings for moose, antelope, Rocky Mountain goat, Rocky Mountain big horn sheep and buffalo took place August 18, 1953 in Helena. Some interested hunters watch Ovie Woolverton select a stack of cards from an area to be sent through the electric sorter.

Game Drawings

It took six weeks to mail permits and return fees under the old system. Moose and antelope drawings were conducted on different days, and first area choice drawings for antelope required almost 10 hours.

Machines completed drawings on all choices for buffalo, moose, sheep and goat, and first area choices for antelope in less than three hours. Permits were printed and mailed four days after the drawings, and all refunds were in the mail 10 days after the drawings.

Mechanical selection assures a purely random drawing in an efficient and economical manner.

Volunteers sort and stack the application cards until they are thoroughly mixed.

The shuffled cards are fed into the electric sorting machine which classifies all cards according to digit numbers. For each drawing, an onlooker chooses one or more of the piles of cards, or a few cards at random until the number of applications fill the quota of permits for each area.

The selected cards are fed into the tabulating machine, which translates all the information punched as small holes on the card. The tabulator prints this information in the form of a printed list, available for inspection as soon as the cards come from the sorting machine.

Awards For Montana Trophies

MONTANA WILDLIFE will award certificates of merit to the first, second and third largest trophies in all classes of big game taken in Montana. Lists will be published in the winter issue of this magazine with the hope of bringing to light more outstanding Montana trophies.

Measurements will be taken according to the standards established by the Boone & Crockett Club's Committee on Records of North American Big Game.

It is believed that many outstanding big game trophies taken in this state have never been reported. For this reason, the contest will be open to any trophy taken in Montana, regardless of the date, if the trophy is available for official measurements.

All species will be represented, and if larger heads are not available, a measurement will be submitted from the best received. The frank objective of this plan is to stimulate interest in reporting record trophies.

Proper forms will be sent to anyone wishing to enter a big game animal, and the top three entries in each category will be officially measured to conform with Boone & Crockett regulations.

Measurements have already been submitted on some species, so do not hesitate to report your big game trophy. It may be a winner. To be counted for 1953, entries must be submitted before December 31, 1953.

Any records which appear to be worth entering on a national basis will be submitted to the New York office of the Boone & Crockett Club.

Four Upland Game Birds of Montana

by William R. Bergeson,
Game Bird Biologist

Four of Montana's lesser-known upland game birds are the blue grouse, ruffed grouse, Franklin's grouse and the chukar. Found mainly in the western part of the state, they are less accessible than the better-known ringneck or Chinese pheasant.

Three of these species live in the high mountain forests, while the chukar prefers rocky slopes in lower altitudes. Since the chukar was introduced into Montana only a few years ago, it is still protected, and not included on the official state game bird list.

Blue grouse **(Dendrogapus obscurus richardsoni)** nest on the ground in forested mountain areas, under the shelter of brush, logs and rocks. The nest is shallow and sparingly lined with dry vegetation, and, usually, a few feathers from the female. The mother lays six to 10 eggs, colored a creamy buff with red-brown spots.

The flight of the blue grouse is rapid and direct, with fast-beating wings. Often, when flushed from trees on ridges, the birds will dash precipitately down into valleys far below, gliding on set wings until lost from sight among the forest trees.

In summer, blue grouse feed on insects, succulent plants and berries, moving up to higher levels as the season progresses. However, during August, they frequently reverse this movement, and are found on hayfields and along stream bottoms. In the winter, they live mostly in the trees, depending upon buds and fir needles for food. In severe weather, birds have been known to remain for days in the shelter of the same dense Douglas fir.

The principal predators are probably the goshawk and the great horned owl, but carnivores such as the bobcat and coyote take their share.

The ruffed grouse **(Bonasa umbellus umbelloides)** is gray-brown, about the size of a small pheasant, and has a fan-shaped tail with a broad black band.

In spite of their wide latitudinal range, from counties west and north of the Continental Divide, to the Snowy and Crazy Mountains in central Montana, and the Absaroka's north of Yellowstone Park, the ruffed grouse is restricted to a relatively small portion of the state because of the requisite ecological factors.

In early spring, when the first pussy-willows appear and patches of the past winter's snows still lay in the shaded woods, the drumming male ruffed grouse announces to the world that he has established his territory. This drumming sound is produced by the beating of the bird's wings against the air, and resembles the starting of a distant, balky, one-cylinder outboard motor.

The nest is usually placed in a sheltered spot under a log or brushpile, and consists of a shallow depression lined with dry vegetation and a few feathers. A clutch consists of eight to 15 brownish-buff eggs. The young are precocious, and are capable of short flights when a week old.

The ruffed grouse is a bird of the brush and is seldom seen far from stream bottom types, where insects

GAME

Here are four of Montan
most hunters — blue g
grouse (upper right), chu
grouse (lower right).

The general coloration of
richardsoni) is dark gray.
female, appearing in some
Males can generally be d
by the precence of short w
air space, and the yellow
average weight of the blue
with some large, mature m
Their average length is al

The blue grouse are fou
ferous forest belts in the
They are most abundant w
preferring remote regions
and fire offer good cove

Franklin's grouse **(Canachites Frank**
to black colored grouse. Male have
on the sides of the rump and red pat
a more reddish-brown color and are
they are somewhat smaller than m
one pound and average 15 inches in

The Franklin's grouse is restricted
with optimum range found in northe

The plumage of the chukar partridg
ish brown with a bluish cast on the
are the eight to 13 flank bars, and
passing down the sides of the neck a
throat. The beak, eyelids, legs and f

The bird is somewhat larger than
them in general appearance in go
alike, but can be distinguished by t

The main requirements of chukars
sides where bromes, such as cheat
available to livestock. Sufficient wa
radius. Forested areas are shunned.

The ruffed grouse **(Bonasa umbell**
the size of a hen pheasant. The ruffe
the ruffed grouse's tail is fan-shaped
near the tip in a broad, black ban
deep brown or black cape, or ruff,
ragged crest of feathers on the head.
half to one and three-quarters pounds

Alder and willow thickets along str
of Montana provide the type of fo
grouse. Best ruffed grouse range is
Continental Divide. However, they a
and Crazy Mountains, in central Mo
central portion of the state.

BIRDS

s game birds unfamiliar tc
se (upper left), Franklin's
r (lower left), and ruffed

e b'ue grouse (**Dendrogapus**
ıe male is darker than the
hts to be a dark, slate-blue.
nguished from the females
e feathers around the neck
atches over the eyes. The
rouse is about two pounds,
s approaching four pounds.
t 20 inches.
in most of the upper coni-
ountain areas of Montana.
t of the Continental Divide,
ere mature stands of pine

i) or "fool hen" is a small, dusky gray
onspicuous black and white banding
s over the eyes. Females tend toward
rongly banded all around the body;
s. These birds weigh slightly under
ngth.
the mountainous portions of Montana
Lincoln and Flathead counties.

Alector graeca chukar) is a pale, grey-
east. The most conspicuous markings
e wide black line through the eyes,
across the upper breast, encircling the
of the chukar are red.
Hungarian partridge, but resembles
away flight. The sexes are colored
s and body conformation.
e rough, rocky slopes, and steep hill-
rass, which is a preferred food, are
must be available within a short

umbelloides) is a gray-brown, about
grouse resembles the pheasant, except
nd rather pointed. The tail terminates
These birds are characterized by a
etiher side of the neck, as well as a
he ruffed grouse weighs one and one-
Their average length is 18 inches.
n bottoms in the mountainous portions
and cover preferred by the ruffed
the counties west and north of the
present in fair numbers in the Snowy
na, and the Absaroka's in the south

and vegetables matter are available. In the winter, they feed on fir needles and buds of diciduous trees and shrubs.

When the winter snow is deep, the grouse dive into it, leaving no track on the surrounding surface — and spend the night. At this time, bristly appendages appear on either side of the toes, aptly known as "snowshoes." When spring comes, these snowshoes are shed.

The principal ruffed grouse predators are believed to be the same as those of the blue grouse, the goshawk, the great horned owl, bobcat and coyote.

The ruffed grouse is considered a "low-land" species, and the blue grouse are found more commonly along the high ridges. Franklin's grouse **(Canachites Franklini)** occupy the intermediate area between these two species, and may overlap both.

The male Franklin's grouse in display struts with spread tail, drooping wings, and head drawn back with the red combs over either eye prominently displayed. There are records of this bird drumming somewhat in the manner of a ruffed grouse.

The nest is placed on the ground under bushes, or beneath low-hanging spruce branches. A full clutch consists of 10 to 16 buff-colored eggs marked with varying shades of deep brown. Because of the altitude at which these birds nest, many clutches do not hatch until early July. The care of the young falls to the female, but instances have been noted when a male attended the chicks.

Like other grouse, this bird lives on plant material, insects and berries, and great quantities of pine and fir needles. In the winter, they remain almost constantly in trees, and are difficult to find because of their aboreal habits.

Little is known about the effect of predators on this species, but goshawks, great horned owls, and carnivores such as the lynx and marten occupy their range. Based on a study of marten in northwestern Montana, Franklin's grouse constitute a small portion of this fur-bearer's diet.

The Franklin's grouse has no fear of man, and many tell of killing them with sticks, or shooting several from a flock, one by one, without alarming the others. The birds may even dodge missiles thrown at them by shifting position a bit, not bothering to fly. The principal cause of their scarcity is probably their vulnerability to man.

Introduced into the United States from India in 1893, the chukar **(Alector graeca chukar)** has become well established in rough, semi-arid portions of Nevada, California and Washington. Chukars were first released in Montana in 1938, but failed to become established.

Since 1950, brood stock obtained mainly from Washington have been the sources of releases, totaling about 700 birds each year. These birds have been released in large groups of 100 or more to a plant in selected areas over the state.

Nests are placed usually on slopes some distance from creek bottoms and are well-concealed by low vegetation. The average clutch is about 15 eggs, although as many as 19 young have been observed in a single brood.

Invariably, they will run uphill but, if blocked, will run around the intruder, or flush. They will travel far in search of suitable habitat, and movements of 18 to 20 miles are not uncommon. Chukars are swift afoot and would rather run than fly.

Because of their habit of roosting in open areas, chukars are vulnerable to predation by horned owls to a serious degree; other predators are eagles, coyotes and bobcats.

If the chukar becomes established in the areas, which at present are not occupied by any upland game bird, Montana hunters will be provided with much additional sport.

THARS BAR IN THEM THAR HILLS

by

Bob Cooney, Director, Wildlife Restoration

There is something even in the name "grizzly" or "silvertip" that stirs the imagination. Stories of ferocity, courage and vitality some to mind. Many of these can be discounted, but there are enough authentic records to make one a bit more alert while traveling through grizzly country.

Early Abundance

Next to a glimpse of the bear itself, just to see its huge tracks along a remote mountain trail can give us a real thrill.

The grizzly is a true wilderness species. Unlike the smaller black, he now shuns the activities of man. He lives and thrives in the remote back country.

For some of the early and most vivid descriptions of the grizzly in this part of the West, we are indebted to the journals of the Lewis and Clark Expedition concerning their trip up the Missouri River in the spring of 1805.

Just above the junction of the Missouri and Yellowstone Rivers, they first encountered the "white bear," as the silvertip was then called by the Indians. From that point on up the river, they often saw grizzlies. They were particularly numerous in the vicinity of the Great Falls of the Missouri. Here, well-worn buffalo trails led down through the cut banks to the river's edge.

Great herds wound daily down the narrow trails to drink. The press of oncoming buffalo often forced the leaders out into the current, and according to the journals, many were swept over the falls. The dead drifted ashore, providing a banquet for the grizzlies gathered there.

Judging from references to the grizzly bear in many early writings, their original range extended throughout the western states. Mention was made of their appearance as far east as North and South Dakota, Nebraska, and even Kansas. This picture of relative abundance and wide distribution has changed greatly through the years. Total extermination has occurred over much of its historic range south of the Canadian boundary. Now, only three states report any significant number of grizzlies. Montana's census figures of approximately eight hundred represents the largest number, with Wyoming and Idaho following.

Information Needed

The Montana State Fish and Game Commission recognized several years ago that grizzly numbers had reached a critical level. In order to

gain information needed for effective management, field surveys were outlined and carried out.

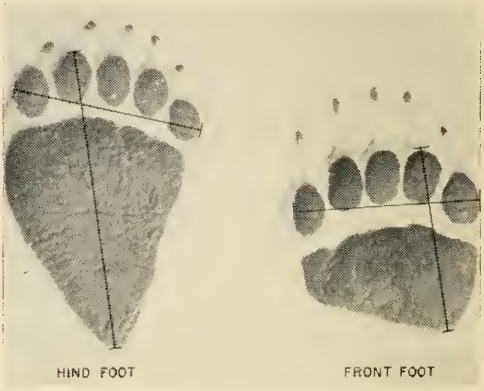
The Sun River, as well as the South Fork, Middle Fork and North Fork of the Flathead were covered. Additional work was carried out in the Swan and Mission ranges and the Absaroka Wilderness Area north of Yellowstone Park. Information regarding numbers and distribution was of primary importance.

In order to gain the most complete figures possible, the number of grizzly bear actually seen was augmented by estimated numbers based upon evidence observed in the field. Tracks were used as a basis for these estimates. To avoid duplication in numbers based on tracks, careful measurements were taken. The width and length were recorded for both front and hind tracks. In determining the width, the measurements were taken across the toes; the length was secured by measuring from the point of the heel to the end of the toes. These measurements indicated a variation in size and shape of the tracks of the individual bear. A census method similar to this has been used by the Alaska Game Commission in their bear census work on Admiralty Island.

The population of grizzly bear within the boundary of the Sun River Game Preserve (200,000 acres), was considerably larger than found anywhere else during the survey. This area had been closed to all hunting since 1912, and has apparently had a very important role in maintaining grizzly numbers within and adjacent to this area.

Feeding Habits

The work with grizzlies brought out some interesting material on their feedings habits. This was felt to be less spectacular, but, we hope, more authentice than the following quotation from an unknown early student in this field.



The width and length of tracks of individual grizzly bear were found to vary sufficiently to be a reliable method of avoiding duplication in the use of tracks for census purposes.

"He," referring to the grizzly, "knocks the top off an ant hill, buries his nose in the interior, and by a few inward breath like a suction pump, draws every vestige of life from the greatest hill."

The following notes were obtained during fieldwork throughout the grizzly ranges of the state. They indicate a varied diet for this big bear throughout the seasons.

EARLY SPRING — Green vegetation, particularly early grasses, appeared to be the most important item used at that time. Some searching for winter-killed game animals was noticed.

MID AND LATE SPRING – With the appearance of the dog-tooth violet and a species of wild parsnip, the grizzlies turned more and more to the digging for roots and bulbs of these and similar plants. Large areas were found which were dug up in a search for this type of food. The use of green vegetation, particularly that of grasses, continued.

SUMMER — During this period of the year, the consumption of grasses lessened materially. The use of ants, beetles and other insects became important. Much of this type of food was found by tearing open rotten stumps and turning logs and rocks. As the summer progressed, the use of wild fruit and berries became increasingly important. The huckleberry was the most favored.

FALL — During the fall, the use of pine nuts became extremely important. This type of feeding was restricted for the most part in the areas observed, to the nuts of the white bark pine. These were secured by digging up squirrel caches. This activity took the grizzly into the subalpine basins and side hills at an elevation of approximately sixty-five hundred feet and above where the white bark pine was commonly found.

It is suspected that the use of these nuts is important to the bears during this period while they are gaining the necessary fat to aid them to exist throughout the hibernation period.

The use of rodents as an item of diet was noticed during the entire summer and up into the fall. This type of food, however, was not considered of primary importance. The occasional use of a new-born calf elk was also noted, but was so rare as to not be considered important either to the bear as food or to the elk herd as a source of loss.

Management

The taking of grizzlies as a game animal by hunters has long been an important sport. The maintenance of a huntable population throughout the suitable areas was, therefore, one of the chief objectives of the study.

It soon became obvious that a serious drain in grizzly numbers was represented by the spring season which had been in effect for a number of years.

Although considerable difficulty was experienced in getting into grizzly range during this time of year, the hunter success was far higher than that reached during the fall. The feeding habits of the bear after emerging from hibernation brought them out in the open grass lands and snow slide areas. Here they were more readily detected by hunters.

A hunter kill averaging between 15 and 20% of the grizzly population was felt to be considerably higher than desirable, as it approximately represented the annual increase for the species.

When this information was presented to the Fish and Game Commission, spring seasons were discontinued for the grizzly.

Observations made throughout the years that followed have indi-

cated that this has apparently represented an important factor in the development of the present population. The hunting of this species is now restricted to the regular fall season, October 15 to November 15, except in areas where there is an early elk season. Here the grizzly bear season coincides with that set for elk, but in all cases closes November 15.

Based upon their reaction to protection as demonstrated by the Sun River Game Preserve, it was found desirable to create a grizzly bear closure on the west side of the South Fork of the Flathead. In this way, a pattern of open and closed areas was set up. It is felt that this has played an important part during the past several years in helping to hold up grizzly numbers, and yet, adequate intervening areas have been left open for hunting.

Damage to private property was found to be unimportant in the areas covered. It is felt as long as the grizzly is restricted in his range to primarily wilderness type mountain country, little conflict with other types of land use will result.

It has now been almost 10 years since intensive field work has been carried on with the grizzly bear. It has been arranged, therefore, that an adequate re-check would be made this year, covering their most important ranges. In this way, the results of the management practices now in effect will be evaluated.

Sportsmen recognize the serious responsibility of helping to maintain this important and rare big game animal. The Montana Fish and Game Commission has also signified its particular interest by the selection of the grizzly bear as its official emblem.

It is pleasing to find that present-day management has retained a place for this animal. To many, it typifies a remnant of the original West.

Two successful hunters eye their Grizzly taken in Montana's Sun River country, Bob Marshall Wilderness Area. Note the hump on the bear's back, and the silver cast to the fur, distinguishing features of this species.

DUCK STAMPS:
Emblems of Good Management

Blue-winged teal are pictured on the 1953-54 duck stamp, painted by Clayton B. Seagears, director of conservation education for the New York State Conservation Department.

The stamps sell for $2, and all migratory waterfowl hunters over 16 years of age are legally required to buy and carry a signed stamp of current issue when hunting. Duck stamps are available at any U. S. Post Office.

The money obtained from stamp sales helps finance the waterfowl refuge program maintained by the Federal government. Of the funds, 85% is used for the purchase and maintenance for the waterfowl refuges all over the country by the U. S. Fish and Wildlife Service.

Enforcement of the Migratory Bird Hunting Stamp Act, printing and distribution of the stamps, and other forms of migratory bird conservation accounts for the remaining 15% of the stamp sale money.

The first Federal duck stamps were issued in 1934, bearing a picture of a pair of mallards, drawn by J. N. "Ding" Darling, known for his political cartoons. Darling was made Chief of the Bureau of Biological Survey in 1934, and at that time was chairman of the Iowa State Game Commission. He worked for the enactment of the Duck Stamp Law, and is credited with initiating the first constructive waterfowl program in the history of conservation.

The stamps bordering the page are the issues for the years 1934 to 1953.

H. E. Lillis, Billings, gets his buffalo with a glass bow and arrow. The old bull lived on Anderson Mountain in the Absaroka Wilderness Area, north of Yellowstone Park. As a trophy, it ranks among the world's best, based on Boone & Crockett Club records.

The outside curve of the left horn measures 21½ inches, and the right horn 21 inches. Base circumference of each horn is 16 inches, and extreme spread is 33⅛ inches. The meat weighed 970 pounds, and the hide 219 pounds. Six pack horses were needed to take the meat, hide and head out of the wilderness area.

Three buffalo were taken in Montana's Absaroka Wilderness Area this year under the permit system. The other successful hunters were Don Kampfe, of Luther, and George Hall, age 16, of Great Falls.

MANAGEMENT PAYS OFF

A bow string twangs, an arrow speeds on its silent way — a buffalo drops. Rifle shots vibrate back and forth across canyon walls, and two more buffalo become trophies.

In other areas, Rocky Mountain big horn sheep are stalked and bagged and close by, a rugged mountain goat is centered in the sights of a hunter's gun. Mammouth Bull moose fall before the rifles of keen-eyed sportsmen.

Where is this place? Alaska, Canada, or a big game hunter's dream? No, it happened in Montana, U.S.A., in 1953.

Not many years ago, the most optimistic game managers could only hope that buffalo, moose, mountain sheep and goats could be hunted in certain areas. True, they knew that animals in some herds were dying of old age.

But, greater concern was research evidence indicating a definite need to remove some of the old-timers, particularly the males. Over-balanced sex ratios, danger and incidence of disease, and the waste of animals dying were sufficient reasons for having a limited hunt.

The question was how to manage this without endangering entire herds of these so-called rarer species.

Opportunity to manage small herds came with legislation allowing a permit system on moose and antelope. This worked so well the 1953

Montana Legislature enacted a law giving the Fish & Game Commission authority to issue special licenses for limited numbers of antelope, moose, mountain sheep, mountain goats and bison. Special fees were also established for such licenses and a drawing system was authorized to give all hunters an equal chance for these licenses.

Much maligned, cussed and discussed, the permit system, nevertheless, is a needed game management tool. It allows sportsmen to harvest animals that would otherwise die and be a total loss. It is a means of distributing hunting pressure to assure that herds in remote areas are hunted sufficiently, while accessible herds of big game are protected from over hunting. The system gives a control in removing excess males serving no purpose in some herds, and it may even serve to scatter animals, reducing the possibility of loss due to disease.

Hunting for wild buffalo last occurred in Montana in 1884 where four were shot by Piegan Indians in the Sweet Grass Hills.

Existing herds today are found largely under fence in public or private herds. But one free-roaming herd in Montana exists today in the Absaroka Wilderness Area.

This group of bison is largely made up of old males apparently "whipped" from the herd in Yellowstone Park. The old bachelors are short-tempered and have, on occasion caused considerable excitement by plowing into a string of pack horses.

Getting one of these intractable old patriarchs is a man-sized job requiring from 8 to 12 horses for packing equipment, trophy and meat.

In hopes of a sustained program, the department authorized three permits for buffalo in 1953. Although this represents only a fraction of the 250 hunters who applied, isn't it better to have three hapy hunters this year, and possibly three or more in succeeding years than stacks of bleached bones?

Forest Anderson, Helena, Associate Justice of the Montana Supreme Court, was the first to bag a Rocky Mountain Bighorn sheep in the 1953-54 special permit hunting season.

Using a 300 Magnum, he placed two shots in the neck of this fine ram, taken in the Sun River area on the ridge between Mortimer and Big George canyons. The ram was 5 or 6 years old with symmetrical horns.

A Rocky Mountain goat shot near Moose Lake in the Crazy Mountains north of Big Timber is taken out by Joe Gaab, Fish & Game Department big game biologist. This goat comes from a transplanted herd now well-enough established to allow hunting under the permit system.

Considered by many to be the top big game trophy, the big horn sheep is a rare trophy in any land. Once a common resident of badlands and mountains, the species almost disappeared about 1900. The Adubon sheep of the badlands became extinct in 1915.

Disease due to local concentrations sems to be one of the limiting factors, and as any domestic sheep raiser will testify, a surplus of rams is not good for a sheep herd, tame or wild.

Permits for 30 rams of at least a three-quarter curl will assure that some of the old-timers are taken. Sex ratios will be balanced and a hunted herd is usually a thriftier, more productive herd since the animals are scattered from regularly used areas where disease may develop because of close contact.

While Montana has a mountain goat season on the regular license, there are few regions, including one area developed entirely from transplanted animals, where a limited number of goats could be taken. Mountain goat herds seem to reach a limit beyond which the population does not increase. Newly-planted herds increase rapidly to a certain point, and then taper off.

Hunting, if controlled, should tend to improve the herd. With more information on mountain goat numbers, additional areas can be included in this type of management.

So, from here, permit hunting looks like a logical solution to the problem of providing some sport hunting without jeopardizing, and instead, often stimulating smaller, isolated groups of big game animals.

Hunters drawing permits for moose, bison, or mountain sheep will not be eligible to apply for another such permit for 10 years. This stipulation, and an impartial drawing assures each hunter an equal chance.

Some Montana hunters have the chance of a lifetime; the rest of us can hope next year it will be our turn.

Robin Hood-1953

Montana bow and arrow enthusiasts enjoyed their first hunting season this year because of the regulations formulated by the Montana Fish and Game Commission. The 1953 Sate Legislature authorized a special hunting season for archers, and opened 15 areas in the state from October 1 through October 14 to bow and arrow hunting of either sex deer.

To participate in the special season, archers had to buy a regular big game license and a special $2 archer's stamp. These were obtained from license dealer agents, local deputy game wardens or the Fish and Game Department in Helena. After shooting an animal, the bow hunter attached the big game license to the carcass, and thereby became ineligible to kill another deer during the regular open season.

Open Areas

These areas in Montana were open for bow and arrow hunting: Lincoln county; the Swan River drainage in Missoula and Lake counties; a large area in Teton, Pondera, Toole, Liberty, Hill, Blaine and Chouteau counties; and parts of Cascade, Judith Basin, Broadwater, Wheatland, Gallatin, Yellowstone Valley, Powder River counties and the Billings airport.

All are good game areas, and were selected for the archery season because of the danger to livestock and humans from big game rifles. Many bow and arrow areas are near towns, highways and railroads.

Expert Advice

Archery experts Fred Bear and Jack Van Coevering give helpful advice for experts and beginning archers in their booklet FUN WITH BOW AND ARROW. Archers are advised to use the heaviest bow they can shoot accurately for hunting. Most states prescribe the minimum pull, arrow length and type of arrowheads that can be used. In Montana, the Fish and Game Commission specifies a non-mechanical bow with not less than a 40-pound pull, and arrows not less than 24 inches in length. The arrowheads should be steel, and not less than one inch in width. Crossbows are illegal.

Use Camouflage

Masking tape coated with brown shoe polish to aid in camouflage is advised for covering the bright bow surface. The bow should be waxed heavily before applying the tape to prevent injury to the finish when the

tape is removed after the hunting season.

Hunting arrows are the same length as target arrows, but are equipped with hunting points, or "broadheads." These come in many styles and are very effective if they are sharp. It is a good idea to carry a file when hunting to keep the arrow points in good condition.

Arrows kill by hemorrhage and dull points will push arteries aside; sharp broadheads cut them. Broadheads have a tendency to ricochet, so always use caution, and be sure no one is in range when you are shooting.

Hunting Methods

Two methods generally used to hunt deer and other big game with bow and arrow are: stalking and watching from a blind. The blind should be just high enough for the arrow to clear the top, and large enough for plenty of room to swing the bow, and to shoot from any direction.

Clear the blind area of brush, for an arrow hitting a twig will be deflected. Best hunting from the blind is in the first morning hours and in late afternoon. Stalking is effective between these times.

After stalking the animal, you must get within shooting range of the target, about 30 yards or less. To do this, you may have to crawl on your stomach the last few yards, unencumbered by quiver and boots, to make less noise.

Hits in the ribs, low behind the shoulders of the animal, are most effective. After the shot, remain quiet and make note of the direction the animal was headed. Gather up your equipment and start following.

Another good point to remember is face painting. Serious bow hunters paint their faces for better concealment. White faces are conspicuous in the deep woods, and burnt cork or dark makeup helps to keep the animal from knowing he isn't alone.

Very Popular

There has been a tremendous rise in the popularity of bow and arrow hunting in the United States the past twenty years. To illustrate, Michigan legalized archery hunting seasons in 1937. That year, 200 archery licenses were sold. By 1952, more than 28,000 Michigan sportsment bought bow and arrow licenses.

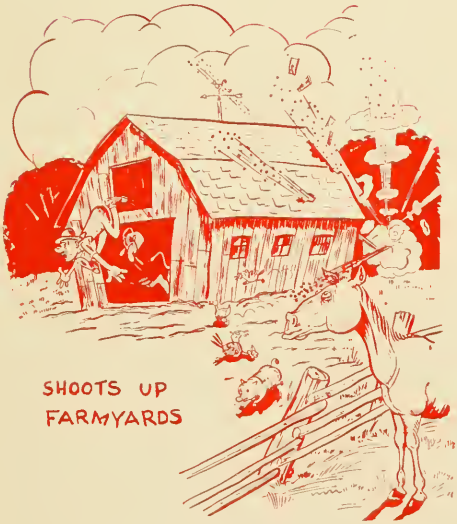
Hunters are not advised to depend upon bow hunting skill to fill the freezer, but those who know say it is unequaled for pure sportsmanship. The experts claim the archery season brings the hunters down on an equal footing with wild game, pitting cunning against cunning.

Respect for Wildlife

Roaming the forests gives the archer new respect for wildlife, and the large number of sportsmen turning to bow and arrow hunting proves it gives great satisfaction.

WHY WE HAVE
"NO HUNTING!"
SIGNS.
HOMER SAP
IENS TEARS
FENCES DOWN.

FRIGHTENS
LIVESTOCK
BLANG
BLANG
BLANG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